



Statistical Analysis Interview Questions

- 1. A bag contains 3 white and 2 black balls. Another bag contains 5 white and 3 black balls. If a bag is chosen at random, and a ball is drawn from it, what is the chance that it is white?
- 2. A carnival game involves throwing 3 dice and summing up the numbers on the tops of the dice. The item associated with this sum is then given to the thrower as a prize. The most expensive prizes are to be kept with which sum to minimize the chance of collecting it?
- 3. You have 25 horses and you can race only 5 of them simultaneously. Assuming you do not have access to a stopwatch, how many times would you need to race the horses to find the 3 fastest horses.
- 4. What is the role of probability in inferential statistics?
- 5. How would you estimate the number of crocins used in Karnataka in a year?
- 6. How would you statistically proceed to estimate the average weight of all fishes in a lake?
- 7. What is the Central Limit Theorem and why is it extremely important for making inferences?
- 8. What is a P-value? What is its significance in an experimental setup?
- 9. What is the role of confidence intervals in the estimation process?
- 10.Researchers have developed a chemical additive to EV batteries and claim that the average lifespan of this new battery is greater than 1100 charge cycles. A sample of 25 EV batteries is chosen to test this claim.
 - a. 1. State the hypotheses you will use?
 - b. 2. Is it one-tailed or two-tailed?
 - c.3. What kind of test will you use and why?
- 11.Explain the difference between Type 1 and Type 2 Errors in a Hypothesis Testing Scenario using real-life examples.
- 12. What are degrees of freedom in general? For an ANOVA Test, what are the degrees of freedom?
- 13. When do we use a t-test vs a z-test?
- 14. What is precision and what is recall and what do they signify? Explain using real-life scenarios?
- 15. What is the Chi-Square Test of Independence? Explain with real-life examples?
- 16.An analog clock breaks into 4 pieces. The sum of numbers in each piece is 15. Find the pattern in which the clock is broken.
- 17. Statistically, how would you ensure that the sample you choose to train a machine learning model is representative of the population?
- 18.Statistically, how can you ensure that the features chosen for a machine learning model are significant?
- 19. What is the Statistical power of a hypothesis test? On what factors does statistical power depend on.
- 20. We want to increase the confidence level of our estimate but we don't wants for some the confidence level of our estimate but we don't



